

1987 Dry Year

Concern	Tools	System Status		Priority	
		Historic	IA Baseline WQCP)	Action	Evaluation
Yearling salmon migrants Oct-Jan	<ul style="list-style-type: none"> Increase inflow Reduce export Close DCC 			B	Dec low levels of salvage (10/TAF). No flow pulses.
Winter run survival Dec-Mar	<ul style="list-style-type: none"> Increase inflow Reduce export Close DCC Reduce export 	Pulses up to 40kcfs 4000-6000 Closed by early Jan 4000-8000	Pulses up to 40kcfs 5000 Closed Dec 5000	A/B	<ul style="list-style-type: none"> B - Low numbers in Feb-Mar A - Mar two weeks
Delta Smelt Adults Jan-Mar	<ul style="list-style-type: none"> Reduce export Increase inflow Reduce export 			B	<ul style="list-style-type: none"> Low numbers salvaged FMWT index of 400 (low)
Steelhead Feb-May X2 Feb - June	<ul style="list-style-type: none"> Reduce export Increase inflow Reduce export 	6000-8000 Outflow 3000-7000	3000-5000	B OK	<ul style="list-style-type: none"> 10+/TAF April
Salmon Fry Feb-Mar	<ul style="list-style-type: none"> Delta outflow Reduce exports Reduce exports Increase SI flow Close HOR 	5000 8000 >>> 4000 8000 >>> 4000 2500 Open	7000-10,000 X2 WQCP 1500 1500 3200 Closed	OK A A/B/C	No pulses to bring them to Delta <ul style="list-style-type: none"> April-mid June - VAMP + 15-day early VAMP + extend for 30 days
DS Young Apr-Jul	<ul style="list-style-type: none"> Outflow 	5000 Mar-Jun 3500 July	7000-10000 May/June 4000 in July	B/C	<ul style="list-style-type: none"> A - Mid April-mid May 1000/TAF C - Through mid June 100-1000 B - Early April 100/TAF
San Joaquin smolts Apr-Jun	<ul style="list-style-type: none"> Increase Sac flow Reduce exports 	3500 July 4000-6000 in May-June	3000-5000	OK	<ul style="list-style-type: none"> B - May - June 100/AF C - July 10/AF
Striped Bass Young					
Spittail May-Jul					

Game 1987

Old Game 1A

- WQCP impact was 40 TAF.
- Folsom and Shasta have small upstream cost = 100 upstream use.

Oct-Jan

Action: cut exports in December to 7,500. 200 b(2) cost.

Feb-Mar

Action : cut exports to 5000 for last two weeks of March. Cost to b(2) = 80 TAF. One half was charged to WQ.

Apr-Jun

Action: add 5000cfs for July to San Luis from upstream releases.

Action: standard 1500 cfs VAMP mid Apr-mid May; then 2000 cfs limit mid May-first week in July.

Action: 50 TAF of upstream b(2) transferred to San Luis for carryover.

New 1B-1987

- Initial conditions: Storage is high after wet year.
- Upstream b(2): cost of 250 TAF
- WQCP cost to b(2) was 450 TAF.
- 100 TAF left for Delta export actions.
- 300 TAF lower exports under DAILY OPS than DWRSIM.
- Low point problem so boost carryover with 100 TAF Kern purchase, 60 TAF demand shift from MWD (short term loan)

October	No Actions.
November	B(2) Actions: raise Keswick flows to AFRP level. Raise Nimbus to 2200.
December	B(2) Actions: Raise Keswick releases to AFRP. Raise Nimbus flows to 2200.
January	B(2) Actions: 1. Raise Keswick to AFRP; 2. Raise Nimbus to 2200 cfs. EWA suggestions: E/I relaxation gains 50 TAF
February	No Actions.
March	B(2) Actions: limit exports to 5000 for one week.
April	B(2) Actions: VAMP export restriction to 1500 cfs from 16 th through 30 th - cost to b(2) is 55 TAF.
May	B(2) Actions: VAMP export restriction to 1500 cfs through 15 th .
June	No Actions.
July	No Actions.
August	No Actions.
September	No Actions.

Summary of Year:

- Exports: 5.7 MAF (Historic 5.0 MAF)
- Deliveries: 6.0 MAF (Historic 5.8 MAF)
- Storage: Shasta down 165 TAF, Folsom down 90 TAF. No upstream change; San Luis up at 250 TAF.
- Outflow: 5.8 MAF (Historic 6.1 MAF)
- In-Delta b(2) export reductions: 180 TAF (50 from EWA E/I relaxation).
- Met all deliveries.

Performance of Assets:

- Expanded Banks used sparingly in winter – once for EWA water – and then all of July for water supply to maintain San Luis storage.
- Shasta expansion 290 TAF brought Shasta into year 290 higher.
- Delta Island storage – not refilled or operated.
- Groundwater storage recharged in fall and winter, then discharged to benefit San Luis in spring-summer.

EWA suggestions:

- Need action in Dec for yearling salmon
- Missed one-half of A March priority for winter run salmon, and possibly something for B priority in Feb.
- B priority adult smelt in winter made worse.
- Dec-Jan X2 moved upstream by 10 km over historical from WQCP allowed high exports – a concern.
- 30 day VAMP extensions were not done for A priority smelt.
- San Joaquin smolts B and C priority extensions were not covered.

Note: lower San Luis coming into year affected ability to refill and operate, which is some kind of carryover debt to b(2).

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